EMERSON & CUMING, Inc.
Microwave Products Division
Plastics/Ceramics for Electronics

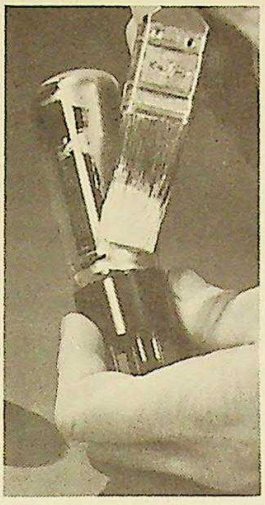
TECHNICAL BULLETIN 11-2-6
ECCOSHIELD ES
Conductive Surface Coating

2-19/10-55D738

Eccoshield ES is a highly conductive surface coating, specifically formulated for RF shielding applications. It is a fine silver based lacquer. Adhesion to metal, plastics, ceramics, wood and concrete is excellent. When applied to a non-conductor, surface resistivity is substantially less than 1 ohm/square. Successive coats decrease surface resistivity further. Eccoshield ES can be brushed or sprayed. If a diluent is needed, use methyl ethyl ketone, MEK. This can also be the clean up solvent. Eccoshield ES is also available in 6 oz. pressurized spray can (aerosol) for ease of applications. Normal coverage for the can is about 30 square feet or 700 linear feet of 1/2" wide seam at surface resistance of less than 0.1 ohm/square.

Eccoshield ES is often used to improve the RF integrity of metal housings or screen rooms. By applying the surface coating to joints, seams and contacting surfaces, it is possible to convert a reasonably good metal structure to one of greater than 100 db insertion loss from 15 kHz to 10 GHz. Eccoshield ES is sufficiently fluid that it will readily flow into cracks. Metal-to-metal contact is improved significantly by applying Eccoshield ES; the coating fills slight irregularities and makes such intimate contact with exposed metal that even corroded joints can be made into acceptable RF seals. Spraying of Eccoshield ES using standard spray equipment or the aerosol can drive the silver particles into crevices and other hard-to-reach places. For removal of Eccoshield ES use Eccostrip 57 (Technical Bulletin 7-2-17).

In a typical shielded box or enclosure of completely metal construction, application of Eccoshield ES to all contact surfaces improves insertion loss values about 30 db over the frequency range 15 kHz to 10 GHz. Improvement will be greater at the high frequency end; improvements are, of course, more spectacular when initial values are low. Eccoshield ES will not fill gross voids at joints or seams; use a caulking compound such as Eccoshield VX (Technical Bulletin 11-2-3) or one of the Eccoshield VY series of RFI caulking compounds (Technical Bulletin 11-2-5). For purposes of estimating, one pound of Eccoshield ES will adequately cover 200 linear feet of seam or joint which is in tight mechanical contact. (See above for coverage of the aerosol.)



Instructions for Use:

1. Remove grease, oil, wax, etc. from the surface to be coated with a suitable solvent or cleansing agent. If electrical contact is to be established with a metallic base, the metal surface must be reasonably free from non-conductive films.
2. Transitions should be filled with Eccoshield SX (Technical Bulletin 11-2-2) to insure a continuous surface.
3. Shake the contents of the container in which the Eccoshield ES is received until it is uniform in consistency, then pour out the desired amount.
4. Apply the Eccoshield ES to the prepared surface with either brush or spray application.
5. The coating will normally air dry to less than one ohm per square in one hour. Apply additional coats if indicated.

Instructions for Use of Aerosol Can:

The nozzle on the container is removable. In case of clogging use a pin to clean opening, or remove it and clean in a suitable solvent such as toluene, xylene or MEK. After cleaning, replace nozzle taking care to keep the opening pointed away from you.

Eccoshield ES contains finely dispersed particles. On long standing these may settle. It is necessary to shake the can vigorously for an extended period - about one minute - prior to spraying. Shake briefly at intervals during spraying. Spray, keeping spraying head 10" to 12" away from work. Lay down a wet coat.

219-738

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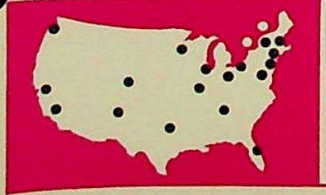

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